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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/698,935

11/03/2003

Chung Chan

069660.00003

5062

33221 7590 04/01/2009  
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EXAMINER

GUERRA-ERAZO, EDGAR X

ART UNIT

PAPER NUMBER

2626

MAIL DATE

DELIVERY MODE

04/01/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/698,935	<b>Applicant(s)</b> CHAN, CHUNG	
	<b>Examiner</b> EDGAR GUERRA-ERAZO	<b>Art Unit</b> 2626	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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## DETAILED ACTION

### *Introduction*

1. This office action is in response to Applicant's submission filed on 11/03/2003. Claims 1-20 are pending in the application and have been examined.

### *Priority*

2. Acknowledgment is made of applicant's claim for domestic priority based on the U.S. Provisional Application 60/423,258 filed on 11/02/2002.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 10, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over P. Faraboschi, J. Fisher, G. Brown, G. Desoli, and F. Homewood. "Lx: A Technology Platform for Customizable VLIW Embedded Processing." In *Proceedings of the 27th International Symposium on Computer Architecture*, June 2000, in view of Smallberg, D.A. 2002. The Culturecom SCS 1610 Processor for Chinese character generation. Report to Culturecom. Dept. of Computer Science, UCLA, Los Angeles; hereinafter referred to as Faraboschi and Smallberg.

5. With respect to **Claims 1, 10, 20**, Faraboschi discloses:

An mobile communications device for use with character-based languages, comprising:

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a character-based VLIW (very long instruction word) processor (*clustered VLIW core architecture and microarchitecture specialized to an application domain, Section 1, pp. 1, right column, first paragraph*) which comprises a VLIW processor core (*VLIW core composed of four 32-bit integer ALUs, Section 3.2, pp. 3, first paragraph*).

Faraboschi does not explicitly disclose the limitation a character algorithm operable for determining a set of character-based language (CBL) characters. Smallberg, however, discloses a character algorithm operable for determining a set of character-based language (CBL) characters (*software algorithm for Chinese character generation on the SCS 1610 hardware processor, Section 5, Page 7*).

Faraboschi and Smallberg are analogous art because they are from the same field of endeavor in VLIW embedded processing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Faraboschi with the software algorithm for Chinese character generation taught by Smallberg in order to provide an enhancement to the core processor by integrating less processing power and memory requirements solutions while generating better Chinese character quality, (*Section 5, Conclusions*).

6. Claims 2, 3, 4, 5, 6, 7, 11, 12, 13, 14, 15, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faraboschi, P. et al., "Lx: A Technology Platform for Customizable VLIW Embedded Processing." In *Proceedings of the 27th International Symposium on Computer Architecture*, June 2000, in view of Smallberg, D.A. 2002. "The Culturecom SCS 1610 Processor for Chinese character generation." Report to Culturecom. Dept. of Computer

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Science, UCLA, Los Angeles, and further in view of A. Klaiber, "The Technology Behind Crusoe Processors." Transmeta Corporation. <http://www.transmeta.com>, January 2000; hereinafter referred to as Faraboschi, Smallberg and Klaiber.

7. With respect to **Claims 2, 11, 12**, Faraboschi in view of Smallberg further discloses:

Although Faraboschi in view of Smallberg discloses a clustered VLIW core architecture and microarchitecture specialized to an application domain, (*Section 1, pp. 1, right column, first paragraph*) and software algorithm for Chinese character generation on the SCS 1610 hardware processor, (*Section 5, Page 7*), Faraboschi in view of Smallberg does not explicitly disclose the limitation further comprising code morphing software operable for translating x86 instructions to VLIW instructions, wherein the character algorithm is a native VLIW algorithm. Klaiber, however, discloses the limitation further comprising code morphing software operable for translating x86 instructions to VLIW instructions, wherein the character algorithm is a native VLIW algorithm (*the VLIW processor architecture having code morphing hardware facilities that provide translation of x86 compatible applications to VLIW hardware, Page 7, Section The Code Morphing Software, Fig. 5, Section Caching, Page 9*).

Faraboschi, Smallberg and Klaiber are analogous art because they are from the same field of endeavor in VLIW embedded processing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Faraboschi in view of Smallberg with the low-power x86-compatible processor implemented with code morphing software taught by Klaiber in order to provide insulation of the x86 programs-including a PC's BIOS and operating system-from the hardware engine's native instruction set so that the native

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instruction set can be changed arbitrarily without affecting any x86 software at all, (*Section The Code Morphing Software, Page 7*).

With respect to **Claims 3, 13**, Faraboschi further discloses:

wherein the processor is part of a system on a chip which further comprises a DSP (digital signal processor) core operable for speech and channel coding, speech recognition and data compression (*Lx architecture contains DSPs and configurable RISC cores, Section 1.1, page 203, first paragraph, Table 2, MPEG-2, JPEG, ADPCM audio coder/decoder*).

With respect to **Claims 4, 14**, Faraboschi in view of Smallberg further discloses:

the system on a chip further comprising display (*Delphi program providing a user interface that allowed the team to select fonts and sizes, and to enter character codes and ranges of codes to be sent to the SCS 1610 processor, Smallberger, Section 4 The SCS 1610 Processor, Second Paragraph*), memory and peripheral controllers (*The core memory communicates with external memory and the peripheral controller using a VSI-like system-on-chip interface, Faraboschi, Section 3.3, right column, page 206, Second Paragraph*).

With respect to **Claims 5, 15**, Faraboschi further discloses:

wherein the processor is part of an integrated circuit which further comprises a DSP (digital signal processor) core operable for speech and channel coding, speech recognition and data compression (*Lx architecture contains DSPs and configurable RISC cores, Section 1.1, page 203, first paragraph, Table 2, MPEG-2, JPEG, ADPCM audio coder/decoder*).

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With respect to **Claims 6, 16**, Smallberg further discloses:

further comprising instructions operable with the processor for providing a CBL graphical user interface (*Delphi program providing a user interface that allowed the team to select fonts and sizes, and to enter character codes and ranges of codes to be sent to the SCS 1610 processor, Section 4 The SCS 1610 Processor, Second Paragraph*).

With respect to **Claims 7, 17**, Smallberg further discloses:

wherein the instructions part of a Chinese language operating system, and the CBL is Chinese language (*SCS 1610 hardware processor assembly code with software algorithm for Chinese character generation, Section 5, Conclusions*).

8. Claims 8, 9, 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faraboschi, P. et al., "Lx: A Technology Platform for Customizable VLIW Embedded Processing." In *Proceedings of the 27th International Symposium on Computer Architecture*, June 2000, in view of Smallberg, D.A. 2002. "The Culturecom SCS 1610 Processor for Chinese character generation." Report to Culturecom. Dept. of Computer Science, UCLA, Los Angeles, in view of A. Klaiber, "The Technology Behind Crusoe Processors." Transmeta Corporation. <http://www.transmeta.com>, January 2000 and further in view of Ae et al., "Real-time multimedia network system using VLIW hardware stack processor," wpdrts, pp.84, 3<sup>rd</sup> Workshop on Parallel and Distributed Real-Time Systems, 1995; hereinafter referred to as Faraboschi, Smallberg, Klaiber, and Ae.

9. With respect to **Claims 8, 18**, Faraboschi in view of Smallberg and further in view of Klaiber discloses:

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Although Faraboschi in view of Smallberg and further in view of Klaiber discloses a clustered VLIW core architecture and microarchitecture specialized to an application domain, (*Section 1, pp. 1, right column, first paragraph*) and software algorithm for Chinese character generation on the SCS 1610 hardware processor, (*Section 5, Page 7*), and the VLIW processor architecture having code morphing hardware facilities that provide translation of x86 compatible applications to VLIW hardware, Page 7, (*Section The Code Morphing Software, Fig. 5, Section Caching, Page 9*), Faraboschi in view of Smallberg and further in view of Klaiber, however, does not disclose the limitation further comprising a network router with a compression engine, wherein the device and the router are operable to communicate compressed CBL data to each other. Ae, however, discloses the limitation further comprising a network router with a compression engine, wherein the device and the router are operable to communicate compressed CBL data to each other (*multimedia network system using VLIW hardware stack processors supporting presentation level protocol of the OSI protocol, further every HSU is connected with controller via multiport memory, which is used as bi-directional instruction and data queues, the controller works depends on the compiled code generated by MNL and therefore, this machine is an extension of VLIW machines, Section 1, Introduction, right column, page 84, Section 5*).

Faraboschi, Smallberg, Klaiber and Ae are analogous art because they are from the same field of endeavor in VLIW embedded processing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Faraboschi in view of Smallberg and further in view of Klaiber with the VLIW-HSP for Multimedia Networking system taught by Ae in order to enhance and communicate the intelligent real-time processing of the conventional VLIW machine at the presentation level protocol, (*Section 1, subsection 2*).



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With respect to **Claims 9, 19**, Ae further discloses:

wherein the router is part of a network of the group of a wireless local area network (LAN), cellular voice, cellular data, and fixed network (*Real-time Multimedia network system in ATM network, Section 2, Page 84, where ATM can simultaneously handle the needs of isochronous (time-dependent) traffic, such as voice and video, and non-isochronous traffic such as LAN data*).

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Vinnakota et al. (U.S. Patent Application: 2004/0103086) discloses a Data structure traversal instructions for packet processing.

Cmelik et al. (U.S. Patent 6,031,992) discloses a Combining hardware and software to provide an improved microprocessor.

D. Laird, Crusoe processor products and technology (January 2000)

<http://www.transmeta.com/press/download/pdf/laird.pdf>.

Mirko Dolle, "Transmeta Crusoe TM5600 in Detail", 2001, Linux Magazine, pp. 42-45.

Crusoe Processor Model TM5800 Specifications, 7/5/2001, Transmeta Corporation, pp. 1-8.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edgar Guerra-Erazo whose telephone number is (571) 270-3708. The examiner can normally be reached on M-F 7:30a.m.-5:00p.m. EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be

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reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edgar Guerra-Erazo/

Examiner, Art Unit 2626

/Patrick N. Edouard/

Supervisory Patent Examiner, Art Unit 2626